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SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Steven Tizio Examiner #: 79632 Date: 5/8/02
Art Unit: 1627 Phone Number 30 5-1963 Serial Number: 09/712,821
Mail Box and Bldg/Room Location: 3801 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: see attached

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Elected Invention: Claims 1-6

Search Claim 1 & Claim 2

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 - 703-308-4488
jan.delaval@uspto.gov

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	Type of Search	Vendors and cost where applicable
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STRUCTURE FILE UPDATES: 13 MAY 2002 HIGHEST RN 415678-09-0
DICTIONARY FILE UPDATES: 13 MAY 2002 HIGHEST RN 415678-09-0

TSCA INFORMATION NOW CURRENT THROUGH July 7, 2001

Please note that search-term pricing does apply when
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Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES
for more information. See STNote 27, Searching Properties in the CAS
Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d ide can l2

L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS
RN **154531-34-7** REGISTRY
CN Epidermal growth factor-like growth factor, heparin-binding (9CI) (CA
INDEX NAME)
OTHER NAMES:
CN Heparin-binding EGF-like growth factor
CN Heparin-binding epidermal growth factor-like growth factor
MF Unspecified
CI MAN
SR CA
LC STN Files: BIOSIS, BIOTECHNO, CA, CAPLUS, EMBASE, TOXCENTER, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
372 REFERENCES IN FILE CA (1967 TO DATE)
8 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
377 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 136:307603
REFERENCE 2: 136:289048
REFERENCE 3: 136:276473
REFERENCE 4: 136:263211
REFERENCE 5: 136:256739
REFERENCE 6: 136:245262
REFERENCE 7: 136:241594
REFERENCE 8: 136:226829
REFERENCE 9: 136:214468
REFERENCE 10: 136:214305

=> d his

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Reference Librarian
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CM1 1E07 - 703-308-4498
jan.delaval@uspto.gov

(FILE 'HOME' ENTERED AT 14:13:19 ON 14 MAY 2002)
SET COST OFF

L1 FILE 'HCAPLUS' ENTERED AT 14:13:33 ON 14 MAY 2002
67 S ?HBEGF?

L2 FILE 'REGISTRY' ENTERED AT 14:13:56 ON 14 MAY 2002
1 S 154531-34-7

L3 FILE 'HCAPLUS' ENTERED AT 14:14:38 ON 14 MAY 2002
375 S L2
L4 517 S HEPARIN(L)BIND?(L) (EGF OR EPIDERMAL GROWTH FACTOR) (L)LIKE(L)G
L5 389 S HB EGF
L6 601 S L1,L3-L5
L7 9063 S GREEN(L)?FLUORESC?(L) PROTEIN OR GFP
L8 1 S L6 AND L7
L9 9 S ?FLUORESC?(L) PROTEIN AND L6
L10 1 S GREEN(L)?FLUORESC? AND L6
L11 8 S L9,L10 NOT L8
L12 1364 S IRES OR INTERNAL?(L)RIBOSOM?(L)ENTRY?(L)SITE
L13 17084 S (IL OR INTERLEUKIN) () 4
L14 31932 S (IL OR INTERLEUKIN) (L) 4
L15 1 S L6 AND L12
L16 8 S L6 AND L13
L17 11 S L6 AND L14
L18 1 S L15-L17 AND EPSILON
L19 1 S L8,L10,L15,L18
L20 18 S L8-L11,L15-L19 NOT L19
L21 11 S L20 AND (RECOMBIN? OR ?DIPHTER? OR ?TOXIN? OR ?TOXOID? OR VE
L22 7 S L20 NOT L21
E KINSELLA T/AU
L23 8 S E14,E15
L24 1 S L23 AND L6
L25 1 S L19,L24
E RIGEL/PA,CS
L26 1 S E3-E13 AND L6
L27 1 S L25,L26
L28 1 S L27 AND L1,L2-L27
L29 0 S LL20-L22 NOT L28
L30 18 S L20-L22,L11 NOT L28
L31 18 S L30 AND L1,L2-L30

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FILE COVERS 1907 - 14 May 2002 VOL 136 ISS 20
FILE LAST UPDATED: 12 May 2002 (20020512/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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=> d 128 all

L28 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:360179 HCAPLUS

DN 134:361341

TI Reporter gene systems for screening for regulators of **interleukin 4**-induced immunoglobulin E synthesis

IN Kinsella, Todd M.

PA Rigel Pharmaceuticals, Inc., USA

SO PCT Int. Appl., 80 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C12N015-12

ICS C12N015-62; C07K014-435; C07K014-475; C12N015-86; C12Q001-68; G01N033-50; G01N033-533

CC 1-1 (Pharmacology)

Section cross-reference(s): 3, 4, 10, 15

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001034806	A2	20010517	WO 2000-US31232	20001113
	WO 2001034806	A3	20011129		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			

PRAI US 1999-165189P P 19991112

AB The invention relates to methods and compns. utilizing diphtheria toxin for screening purposes. The invention is particularly useful in screening for modulators of IgE synthesis, secretion and switch rearrangement. In particular methods of using diphtheria toxin induction of IgE gene expression by activation of the germline **epsilon** promoter via **heparin-binding epidermal growth factor-like growth factor** are described. Constructs that can use survival of Fas-induced apoptosis as a screening mechanism are described.

ST IgE synthesis regulation drug screening; **interleukin 4** inducible promoter effector drug screening; diphtheria toxin IgE gene expression induction effector screening

IT Animal cell line

(BJAB, expression host for screening for effectors of IgE gene expression; reporter gene systems for screening for regulators of **interleukin 4**-induced IgE synthesis)

IT Animal cell line

(CA-46, expression host for screening for effectors of IgE gene expression; reporter gene systems for screening for regulators of **interleukin 4**-induced IgE synthesis)

IT Enzymes, biological studies

- RL: BSU (Biological study, unclassified); BIOL (Biological study)
(DNA-recombining, class-switching, screening for; reporter gene systems
for screening for regulators of **interleukin 4**
-induced IgE synthesis)
- IT Immunoglobulins
RL: BPR (Biological process); BSU (Biological study, unclassified); MFM
(Metabolic formation); BIOL (Biological study); FORM (Formation,
nonpreparative); PROC (Process)
(E; reporter gene systems for screening for regulators of
interleukin 4-induced IgE synthesis)
- IT Genetic element
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)
(**IRES (internal ribosomal entry**
site) element, expression vector using; reporter gene systems
for screening for regulators of **interleukin 4**
-induced IgE synthesis)
- IT Recombination, genetic
(Ig class switching, of IgE genes, screening for effectors of; reporter
gene systems for screening for regulators of **interleukin**
4-induced IgE synthesis)
- IT Apoptosis
(as selection mechanism in drug screening; reporter gene systems for
screening for regulators of **interleukin 4**-induced
IgE synthesis)
- IT Toxins
RL: BPR (Biological process); BSU (Biological study, unclassified); BUU
(Biological use, unclassified); BIOL (Biological study); PROC (Process);
USES (Uses)
(diphtheria, as inducer of IgE gene expression, screening for
modulators; reporter gene systems for screening for regulators of
interleukin 4-induced IgE synthesis)
- IT Drug screening
(for effectors of IgE biosynthesis; reporter gene systems for screening
for regulators of **interleukin 4**-induced IgE
synthesis)
- IT **Proteins**, specific or class
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)
(**green fluorescent**, variants, as reporter; reporter
gene systems for screening for regulators of **interleukin**
4-induced IgE synthesis)
- IT Reporter gene
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)
(in screening for effectors of IgE gene expression; reporter gene
systems for screening for regulators of **interleukin 4**
-induced IgE synthesis)
- IT Allergy inhibitors
(inhibitors of IgE synthesis as, screening for; reporter gene systems
for screening for regulators of **interleukin 4**
-induced IgE synthesis)
- IT Molecular cloning
(of IgE switch recombinases, reporter gene assay for; reporter gene
systems for screening for regulators of **interleukin 4**
-induced IgE synthesis)
- IT Secretion (process)
(protein, of IgE, screening for effectors of; reporter gene systems for
screening for regulators of **interleukin 4**-induced
IgE synthesis)
- IT **Interleukin 4**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
(Biological study); PROC (Process)

- (regulation of IgE synthesis by; reporter gene systems for screening for regulators of **interleukin 4**-induced IgE synthesis)
- IT Retroviral vectors
(reporter gene systems for screening for regulators of **interleukin 4**-induced IgE synthesis)
- IT Fas antigen
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(resistance to induction of apoptosis by, as selection mechanism in drug screening; reporter gene systems for screening for regulators of **interleukin 4**-induced IgE synthesis)
- IT Peptide library
(screening of, for effectors of IgE biosynthesis; reporter gene systems for screening for regulators of **interleukin 4**-induced IgE synthesis)
- IT Promoter (genetic element)
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**.epsilon.**, screening for modulators of gene expression from; reporter gene systems for screening for regulators of **interleukin 4**-induced IgE synthesis)
- IT 154531-34-7D, Heparin-binding epidermal growth factor-like growth factor, fusion proteins with green fluorescent protein
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(as reporter; reporter gene systems for screening for regulators of **interleukin 4**-induced IgE synthesis)
- IT 339606-53-0, 1: PN: WO0134806 FIG: 1 unclaimed DNA
RL: PRP (Properties)
(unclaimed nucleotide sequence; reporter gene systems for screening for regulators of **interleukin 4**-induced IgE synthesis)
- IT 250382-52-6, 2: PN: WO9958663 FIG: 2B unclaimed DNA 339606-54-1
339606-55-2 339606-56-3 339606-57-4 339606-58-5 339606-59-6
RL: PRP (Properties)
(unclaimed sequence; reporter gene systems for screening for regulators of **interleukin 4**-induced IgE synthesis)

=> d l31 bib abs hitrn tot

L31 ANSWER 1 OF 18 HCAPLUS COPYRIGHT 2002 ACS
AN 2002:350757 HCAPLUS
TI Comparison of gene expression profiles in human keratinocyte mono-layer cultures, reconstituted epidermis and normal human skin; transcriptional effects of retinoid treatments in reconstituted human epidermis
AU Bernard, Francois-Xavier; Pedretti, Nathalie; Rosdy, Martin; Deguericy, Alain
CS BIOalternatives, Gencay, 86160, Fr.
SO Experimental Dermatology (2002), 11(1), 59-74
CODEN: EXDEEY; ISSN: 0906-6705
PB Blackwell Munksgaard
DT Journal
LA English
AB In order to validate a model for predictive screening of dermatol. drugs, we used a customized cDNA macro-array system contg. 475 skin-related genes to analyze the gene expression patterns in human keratinocytes from different origins: (1) normal human epidermal keratinocyte mono-layer cultures, (2) the com. available SkinEthic reconstituted human epidermis model, and (3) biopsies of normal human

epidermis. Few markers of those that were detected significantly in keratinocyte mono-layers or in reconstituted epidermis were undetected or detected at very low level in the normal epidermis biopsies. A comparative expression of more than 100 markers could be evidenced in both normal epidermis and reconstituted epidermis samples; however, only 90% of these were detected in keratinocyte monolayers: expression of several terminal differentiation markers, such as filaggrin, loricrin, and corneodesmosin were strongly detected in normal epidermis and reconstituted epidermis, but were not significantly expressed in keratinocyte mono-layers. Under the exptl. conditions described herein, the reconstituted human epidermis model was found to significantly reproduce the gene expression profile of normal human epidermis. Using the same methodol., we then investigated the effects of all-trans retinoic acid, 9-cis retinoic acid, all-trans retinol and a commercialized tretinoin-contg. cream (Retacnyl) on the gene expression profiles of reconstituted human epidermis. According to the nature and the length of the treatments, more than 40 genes were found significantly modified. Among the genes whose expression was decreased, we found cytokeratins 1, 10, 2E, and 6B, several cornified envelope precursors, integrins .alpha.3, .alpha.6, .beta.1, .beta.4, some components of desmosomes, of hemi-desmosomes and of the epidermal basement membrane. Transcriptional upregulation was obsd. for keratins 18 and 19, autocrine and paracrine growth factors such as **HB-EGF**, IGF 1, PDGF-A, calgranulins A and B, **interleukin-1.alpha.** and the other **IL-1-related** markers, type II **IL-1** receptor and type I **IL-1-receptor** antagonist. Our results confirm most of the known effects of retinoids on human epidermis, but also give new insights into their complex pharmacol. activity on skin. The reconstituted human epidermis used proves to be a highly predictive model for efficacy evaluation of skin-targeted compds., such as retinoids.

L31 ANSWER 2 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 2002:123358 HCAPLUS

DN 136:177962

TI Novel human kruppel-like factor 6 (KLF6) with tumor suppressor activity, and uses for diagnostics, therapeutics, and drug **screening**

IN Friedman, Scott; Li, Dan; Narla, Goutham; Martignetti, John; Heath, Karen

PA Mount Sinai School of Medicine, USA

SO PCT Int. Appl., 103 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002012894	A1	20020214	WO 2001-US25046	20010809
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRAI US 2000-224111P P 20000809

AB The present invention is based on the identification of KLF6 as a tumor suppressor gene, and on the discovery that this gene was inactivated or altered in cancers. The inventors first showed that KLF6 is rapidly up-regulated in hepatocytes following partial hepatectomy in both wild type and p53 null animals. The inventors then examd. human tumors in which the p53 gene was intact, to det. if KLF6 gene was inactivated or if expression of the KLF6 protein was altered. The inventors confirmed that

KLF6 expression is attenuated in a variety of glial tumor cell lines. These findings were completed by loss of heterozygosity (LOH) studies. This invention provides a way to find addnl. mutations in the KLF6 gene that alter the activity of the protein in a variety of cancers, such as prostate colon, breast, ovarian, head and neck cancer, hepatocellular carcinoma, and lung cancer. The present invention relates to identification of KLF6, and to related diagnostic and therapeutic compns. and methods. The discovery of this tumor suppressor activity provides **screening** targets as well, particularly **screening** for compds. that overcome gene inactivation or alteration.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 3 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 2002:51533 HCAPLUS

DN 136:117381

TI Bifunctional antibody fusion proteins for targeted gene delivery

IN Nemerow, Glen R.; Li, Erguang

PA Novartis A.-G., Switz.; Novartis-Erfindungen Verwaltungsgesellschaft m.b.H.; The Scripps Research Institute

SO PCT Int. Appl., 106 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002004522	A2	20020117	WO 2001-EP7878	20010709
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			

PRAI US 2000-613017 A 20000710

AB The authors disclose methods and products for targeting delivery **vectors**, such as adenoviral gene delivery particles, to selected cell types. The targeting is effected by a bifunctional mol. that specifically complexes with (1) a protein on the **vector** particle surface and (2) a cell surface proteins. In one example, the authors demonstrate improved adenovirus **vector** binding, internalization, and transgene gene expression in targeted melanoma cells using a fusion protein of tumor necrosis factor-.alpha. and an anti-penton base monoclonal antibody. Virus internalization and reporter gene expression was dependent on activation of phosphatidylinositol 3' kinase via the tumor necrosis factor receptor signaling pathway.

IT 154531-34-7D, Heparin-binding EGF-like growth factor, fusion products

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(with anti-genetic **vector** antibodies for enhanced gene delivery)

L31 ANSWER 4 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:855179 HCAPLUS

DN 136:260423

TI Gene Expression Analysis in Human Monocytes, Monocyte-Derived Dendritic Cells, and .alpha.-Galactosylceramide-Pulsed Monocyte-Derived Dendritic Cells

AU Lapteva, Natalia; Nieda, Mie; Ando, Yoshitaka; Nicol, Andrew; Ide, Kazuki; Yamaura, Ayako; Hatta-Ohashi, Yoko; Egawa, Kohji; Juji, Takeo; Tokunaga,

Kátsushi
.CS Department of Human Genetics, Graduate School of Medicine, University of
Tokyo, Tokyo, Japan
SO Biochemical and Biophysical Research Communications (2001), 289(2),
531-538
CODEN: BBRCA9; ISSN: 0006-291X
PB Academic Press
DT Journal
LA English
AB In vitro proliferation and functional activation of V.alpha.24NKT cells
following stimulation with .alpha.-galactosylceramide (.alpha.-GalCer)-
pulsed dendritic cells (DCs) have been obsd. Because little is known
about the mol. events on DCs following interaction with .alpha.-GalCer, we
performed gene expression profiling of 2400 genes in monocytes and
monocyte-derived immature DCs pulsed with .alpha.-GalCer
(.alpha.-GalCer-imDCs). Overall, the expression levels of 48 genes were
up-regulated and 28 were down-regulated in .alpha.-GalCer-imDCs.
Semiquant. RT-PCR anal. on monocytes, imDCs, .alpha.-GalCer-imDCs, and
mature DCs confirmed the up- and down-regulation of the mRNA expression
levels of 28 selected genes. Notably, we identified the specific
up-regulation of mRNA expression levels of RNase A and collapsin response
mediator protein upon the stimulation of imDC with .alpha.-GalCer,
suggesting a novel immunomodulating effect of .alpha.-GalCer on imDCs. In
this study, we used imDCs prepd. by culturing of monocytes with GM-CSF and
IL-4 for 5 days and mDCs prepd. by further culturing of
imDCs with TNF.alpha. for two extra days. (c) 2001 Academic Press.
RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 5 OF 18 HCAPLUS COPYRIGHT 2002 ACS
AN 2001:136138 HCAPLUS
DN 135:90999
TI **HB-EGF** is produced in the peritoneal cavity and
enhances mesothelial cell adhesion and migration
AU Faull, Randall J.; Stanley, Jodie M.; Fraser, Scott; Power, David A.;
Leavesley, David I.
CS Renal Laboratory, Royal Adelaide Hospital, Adelaide, Australia
SO Kidney International (2001), 59(2), 614-624
CODEN: KDYIA5; ISSN: 0085-2538
PB Blackwell Science, Inc.
DT Journal
LA English
AB The mesothelial cell monolayer lining the peritoneal membrane needs const.
repair in response to peritonitis and to the toxicity of peritoneal
dialyzate. In many continuous ambulatory peritoneal dialysis (CAPD)
patients, the repair process progressively fails, and membrane dysfunction
and fibrosis occur. **Heparin-binding epidermal
growth factor-like growth
factor (HB-EGF)** has an important role in wound
repair and is also fibrogenic, and thus may be involved in these processes
in the peritoneal cavity. The presence of **HB-EGF**, its
receptors, and its assocd. **proteins** was detd. in peritoneal
membrane biopsies, cultured human peritoneal mesothelial cells (HPMCs),
and peritoneal macrophages from CAPD patients by reverse
transcription-polymerase chain reaction, flow cytometry, and
immunofluorescence immunocytochem. with confocal microscopy.
HB-EGF effects on HPMC adhesion were measured by a
static adhesion assay, on integrin expression by flow cytometry, and on
migration by wound healing and chemotaxis assays. **HB-
EGF**, its receptors HER-1 and HER-4, and the assocd.
proteins CD9, CD44, and integrin .alpha.3:beta.1 were expressed by
HPMCs and peritoneal macrophages. **HB-EGF** colocalized
with HER-1 and HER-4 in HPMC and induced their adhesion to collagen type

1, expression of .beta.1 integrins, and migration. **HB-EGF** is produced by cells in the peritoneal cavity of CAPD patients and has functional effects on HPMCs that would facilitate repair of the mesothelial layer.

IT 154531-34-7, **Heparin-binding epidermal growth factor-like growth factor**

RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process) **(heparin-binding epidermal growth factor-like growth factor** formation in peritoneal cavity and enhances mesothelial cell adhesion and migration in dialysis wound repair)

RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 6 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:795994 HCAPLUS

DN 132:31744

TI Gene probes used for genetic profiling in healthcare **screening** and planning

IN Roberts, Gareth Wyn

PA Genostic Pharma Ltd., UK

SO PCT Int. Appl., 745 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9964627	A2	19991216	WO 1999-GB1780	19990604
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
PRAI	GB 1998-12099	A	19980606		
	GB 1998-13291	A	19980620		
	GB 1998-13611	A	19980624		
	GB 1998-13835	A	19980627		
	GB 1998-14110	A	19980701		
	GB 1998-14580	A	19980707		
	GB 1998-15438	A	19980716		
	GB 1998-15574	A	19980718		
	GB 1998-15576	A	19980718		
	GB 1998-16085	A	19980724		
	GB 1998-16086	A	19980724		
	GB 1998-16921	A	19980805		
	GB 1998-17097	A	19980807		
	GB 1998-17200	A	19980808		
	GB 1998-17632	A	19980814		
	GB 1998-17943	A	19980819		

AB There is considerable evidence that significant factor underlying the individual variability in response to disease, therapy and prognosis lies in a person's genetic make-up. There have been numerous examples relating that polymorphisms within a given gene can alter the functionality of the protein encoded by that gene thus leading to a variable physiol. response. In order to bring about the integration of genomics into medical practice

and enable design and building of a technol. platform which will enable the everyday practice of mol. medicine a way must be invented for the DNA sequence data to be aligned with the identification of genes central to the induction, development, progression and outcome of disease or physiol. states of interest. According to the invention, the no. of genes and their configurations (mutations and polymorphisms) needed to be identified in order to provide crit. clin. information concerning individual prognosis is considerably less than the 100,000 thought to comprise the human genome. The identification of the identity of the core group of genes enables the invention of a design for genetic profiling technologies which comprises of the identification of the core group of genes and their sequence variants required to provide a broad base of clin. prognostic information - "genostics". The "Genostic.RTM." profiling of patients and persons will radically enhance the ability of clinicians, healthcare professionals and other parties to plan and manage healthcare provision and the targeting of appropriate healthcare resources to those deemed most in need. The use of this invention could also lead to a host of new applications for such profiling technologies, such as identification of persons with particular work or environment related risk, selection of applicants for employment, training or specific opportunities or for the enhancing of the planning and organization of health services, education services and social services.

IT 154531-34-7

RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(core group of disease-related genes; gene probes used for genetic profiling in healthcare **screening** and planning)

L31 ANSWER 7 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:795993 HCAPLUS

DN 132:31743

TI Gene probes used for genetic profiling in healthcare **screening** and planning

IN Roberts, Gareth Wyn

PA Genostic Pharma Limited, UK

SO PCT Int. Appl., 149 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9964626	A2	19991216	WO 1999-GB1779	19990604
	W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	AU 9941586	A1	19991230	AU 1999-41586	19990604
	AU 9941587	A1	19991230	AU 1999-41587	19990604
	GB 2339200	A1	20000119	GB 1999-12914	19990604
	GB 2339200	B2	20010912		
	EP 1084273	A1	20010321	EP 1999-925207	19990604
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI			
PRAI	GB 1998-12098	A	19980606		
	GB 1998-28289	A	19981223		
	GB 1998-16086	A	19980724		
	GB 1998-16921	A	19980805		

GB 1998-17097 A 19980807
 GB 1998-17200 A 19980808
 GB 1998-17632 A 19980814
 GB 1998-17943 A 19980819
 WO 1999-GB1779 W 19990604

AB There is considerable evidence that significant factor underlying the individual variability in response to disease, therapy and prognosis lies in a person's genetic make-up. There have been numerous examples relating that polymorphisms within a given gene can alter the functionality of the protein encoded by that gene thus leading to a variable physiol. response. In order to bring about the integration of genomics into medical practice and enable design and building of a technol. platform which will enable the everyday practice of mol. medicine a way must be invented for the DNA sequence data to be aligned with the identification of genes central to the induction, development, progression and outcome of disease or physiol. states of interest. According to the invention, the no. of genes and their configurations (mutations and polymorphisms) needed to be identified in order to provide crit. clin. information concerning individual prognosis is considerably less than the 100,000 thought to comprise the human genome. The identification of the identity of the core group of genes enables the invention of a design for genetic profiling technologies.

IT 154531-34-7

RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
 (core group of disease-related genes; gene probes used for genetic profiling in healthcare **screening** and planning)

L31 ANSWER 8 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:735387 HCAPLUS

DN 132:192872

TI **Heparin-binding EGF-like**

growth factor is expressed by mesangial cells and is involved in mesangial proliferation in glomerulonephritis

AU Takemura, Tsukasa; Murata, Yuka; Hino, Satoshi; Okada, Mitsuru; Yanagida, Hidehiko; Ikeda, Masaru; Yoshioka, Kazuo

CS Department of Pediatrics, Kinki University School of Medicine 377-2 Ohno-higashi, Osaka, 589-8511, Japan

SO Journal of Pathology (1999), 189(3), 431-438
 CODEN: JPTLAS; ISSN: 0022-3417

PB John Wiley & Sons Ltd.

DT Journal

LA English

AB **Heparin-binding epidermal growth factor-like growth factor (**

HB-EGF), a new member of the **EGF** family, is mitogenic for several types of cells, through **binding** to cell surface heparan sulfate proteoglycans. This study has attempted to delineate **HB-EGF** expression by mesangial cells and to identify its role in exptl. and human glomerulonephritis. Rat mesangial cells, cultured in the presence of phorbol acetate, hydrogen peroxide, interleukin-1 β , and tumor necrosis **factor**- α , expressed **HB-EGF** mRNA. **Recombinant HB-EGF** stimulated rat mesangial cells to proliferate and to express types I and III collagen. In the rat anti-Thy-1.1 nephritis, glomerular **HB-EGF** mRNA was up-regulated and peaked at days 5-7; its expression at the **protein** level in the glomerulus was prominent at days 5-10. By **immunofluorescence**, **HB-EGF** was pos. predominantly in the mesangial area of renal tissues from 23 of 45 patients with various types of human glomerulonephritis, showing a significant correlation with the grade of mesangial proliferation; there was no staining in tissues from patients with minimal change nephrotic syndrome and normal kidney tissues. These

data provide the evidence that **HB-EGF** is synthesized and expressed by mesangial cells and stimulates mesangial cell proliferation and collagen synthesis in vitro. **HB-EGF** is a potential mediator in mesangial cell proliferation and matrix expansion in exptl. and human glomerulonephritis.

IT 154531-34-7, Heparin-binding EGF-like growth factor

RL: BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence); PROC (Process)

(**HB-EGF** expression in mesangium in relation to mesangial proliferation in glomerulonephritis)

RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 9 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:404856 HCAPLUS

DN 131:63507

TI Methods and compositions for improving the success of cell transplantation in a host

IN Tremblay, Jacques P.

PA Universite Laval, Can.

SO PCT Int. Appl., 90 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9930730	A1	19990624	WO 1998-CA1176	19981215
	W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	AU 9918649	A1	19990705	AU 1999-18649	19981215
PRAI	CA 1997-2224768		19971215		
	CA 1997-2225837		19971224		
	WO 1998-CA1176		19981215		

AB The present invention covers significant improvements for each event involved in the transplantation success or graft survival. These improvements, sep. or combined with each other, greatly ameliorate the recovery of a tissue towards a normal function. They comprise: (a) the redn. of early death of transplanted cells by anti-inflammatory agents such as TGFbeta1, an inhibitor of oligosaccharide synthesis, a glucosidase, IL-10, vIL-10, IL-4, INFgamma, IL-2R, IL-1Ra, Fas-L, sCR1, a super oxide dismutase, a neutrophil inhibitory factor (NIF), a ligand binding in an antagonist fashion to LFA-1, MAC-1, ICAM-1, CD-18, CD-31, CD-50, E-selectin, P-selectin, TNFalpha, IL-1 and IL-8. The anti-inflammatory agents may comprise an anti-LFA-1 or -ICAM-1; (b) the improvement of the diffusion and of the fusion of transplanted cells with the host tissue by metalloproteases; (c) the ex vivo proliferation of the transplanted cells with growth factors or oncogenes; (d) the use of fibroblasts or stem cells in lieu of myoblasts, by transforming the formers into the latter with myogenic genes; (e) expressing utrophin in lieu of dystrophin in cases of muscular dystrophy; and (f) immunosuppressing the host for long-term graft survival.

IT 154531-34-7, Heparin binding epidermal

growth factor like growth factor

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses) (anti-inflammatory compns. for improving the success of cell transplantation in a host)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 10 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1999:66673 HCAPLUS

DN 130:295965

TI Dietary .omega.3, .omega.-6, and .omega.-9 unsaturated fatty acids and growth factor and cytokine gene expression in unstimulated and stimulated monocytes; a randomized volunteer study

AU Baumann, Klaus H.; Hessel, Franz; Larass, Iris; Muller, Thomas; Angerer, Peter; Kiefl, Rosemarie; von Schacky, Clemens

CS Medizinische Klinik, Klinikum Innenstadt, University of Munich, Munich, D-80336, Germany

SO Arteriosclerosis, Thrombosis, and Vascular Biology (1999), 19(1), 59-66
CODEN: ATVBFA; ISSN: 1079-5642

PB Lippincott Williams & Wilkins

DT Journal

LA English

AB Dietary .omega.-3 fatty acids retard coronary atherosclerosis. Previously, we demonstrated that dietary .omega.-3 fatty acids reduce platelet-derived growth factor (PDGF)-A and PDGF-B mRNA levels in unstimulated, human mononuclear cells (MNCs). In a randomized, investigator-blinded intervention trial, we have now compared the effect of ingestion of 7 g/d .omega.-3, .omega.-6, or .omega.-9 fatty acids for 4 wk vs. no dietary intervention on PDGF-A, PDGF-B, heparin-bound epidermal growth factor (HB-EGF), monocyte chemoattractant protein-1 (MCP-1), and interleukin-10 gene expression in unstimulated MNCs and in monocytes that were adherence-activated ex vivo in a total of 28 volunteers. In unstimulated MNCs, mRNA steady-state levels of PDGF-A, PDGF-B, and MCP-1 were reduced by 25.+-.10%, 31.+-.13%, and 40.+-.14%, resp., after .omega.-3 fatty acid ingestion, as assessed by quant. polymerase chain reaction (all P<0.05). In monocytes that were adherence-activated ex vivo for 4 and 20 h, mRNA steady-state levels of PDGF-A, PDGF-B, and MCP-1 were reduced by 25.+-.13%, 20.+-.15%, and 30.+-.8%, resp. (all P<0.05). Interleukin-10 and HB-EGF mRNA steady-state levels were not influenced by .omega.-3 fatty acid ingestion. Expression of all resp. mRNAs in control volunteers or in those ingesting .omega.-6 or .omega.-9 fatty acids were not altered. We conclude that human gene expression for PDGF-A, PDGF-B, and MCP-1, factors thought relevant to atherosclerosis, is constitutive, is const., and can be reduced only by dietary .omega.-3 fatty acids in unstimulated and adherence-activated monocytes.

IT 154531-34-7

RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)

(dietary .omega.3, .omega.-6, and .omega.-9 unsatd. fatty acids and growth factor and cytokine gene expression in unstimulated and stimulated monocytes; a randomized volunteer study)

RE.CNT 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L31 ANSWER 11 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1998:33144 HCAPLUS

DN 128:136827

- TI Immunohistochemical localization of **heparin-binding epidermal growth factor-like growth factor** in normal skin and skin cancers
- AU Downing, Marc T.; Brigstock, David R.; Luquette, Mark H.; Crissman-Combs, Missy; Besner, Gail E.
- CS Department of Surgery, The Ohio State University and Children's Hospital, Columbus, OH, 43205, USA
- SO Histochem. J. (1997), 29(10), 735-744
CODEN: HISJAE; ISSN: 0018-2214
- PB Chapman & Hall
- DT Journal
- LA English
- AB **Heparin-binding epidermal growth factor (EGF)-like growth factor** is a 22-kDa glycoprotein that was originally identified as a secreted product of cultured human macrophages. Although the **growth factor** mRNA has been identified in various cells and tissues, the tissue distribution of the **protein** itself has rarely been demonstrated. In this study, the **EGF-like growth factor** was detected immunohistochem. in a variety of human skin samples by indirect **immunofluorescence** using a polyclonal rabbit antiserum raised against residues 26-41 of mature **heparin-binding EGF**. The keratinocytes of a variety of epithelium-derived structures demonstrated reproducible, specific staining for the **EGF**. In normal tissues, this staining was prominent in the basal cells of the epidermis and in the epithelial cells lining epidermal appendages such as hair follicles, sebaceous sweat glands and eccrine sweat glands. In addn., specific staining was detected in skin cancers derived from the basal epithelial cell layer, including basal and squamous cell carcinomas of the skin, with no staining detected in melanoma specimens. Immunoreactive **heparin-binding EGF** was characteristically assocd. with the surface of cells. With minor exceptions, the immunoreactive sites are identical to the known **EGF** receptor distribution in the skin, and suggest that keratinocyte-derived **heparin-binding EGF** may act in concert with other **EGF** family members in processes such as skin morphogenesis and wound repair, as well as in the development of skin cancers.
- IT 154531-34-7, **Heparin-binding epidermal growth factor-like growth factor**
- RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)
(immunohistochem. localization of **heparin-binding epidermal growth factor-like growth factor** in normal skin and skin cancers)
- L31 ANSWER 12 OF 18 HCAPLUS COPYRIGHT 2002 ACS
- AN 1997:476819 HCAPLUS
- DN 127:189113
- TI Selective induction of **heparin-binding epidermal growth factor-like growth factor** by methylglyoxal and 3-deoxyglucosone in rat aortic smooth muscle cells. The involvement of reactive oxygen species formation and a possible implication for atherogenesis in diabetes
- AU Che, Wenyi; Asahi, Michio; Takahashi, Motoko; Kaneto, Hideaki; Okado, Ayako; Higashiyama, Shigeki; Taniguchi, Naoyuki
- CS Department of Biochemistry, Osaka University Medical School, Osaka, 565, Japan
- SO J. Biol. Chem. (1997), 272(29), 18453-18459
CODEN: JBCHA3; ISSN: 0021-9258
- PB American Society for Biochemistry and Molecular Biology
- DT Journal

LA English

AB Methylglyoxal (MG) and 3-deoxyglucosone (3-DG), reactive dicarbonyl metabolites in the glyoxalase system and glycation reaction, resp., selectively induced **heparin-binding epidermal growth factor (HB-EGF)-like growth factor** mRNA in a dose- and time-dependent manner in rat aortic smooth muscle cells (RASM). A nuclear run-on assay revealed that the dicarbonyl may regulate expression of **HB-EGF** at the transcription level. The dicarbonyl also increased the secretion of **HB-EGF** from RASM. However, platelet-derived **growth factor**, another known **growth factor** of smooth muscle cells (SMC), was not induced by both dicarbonyls. The dicarbonyl augmented intracellular peroxides prior to the induction of **HB-EGF** mRNA as judged the flow cytometric anal. using 2',7'-**dichlorofluorescein** diacetate. N-Acetyl-L-cysteine and aminoguanidine suppressed both dicarbonyl-increased **HB-EGF** mRNA and intracellular peroxide levels in RASM. Δ -lambd.-Buthionine-(S,R)-sulfoximine increased the levels of 3-DG-induced **HB-EGF** mRNA. Furthermore, hydrogen peroxide alone also induced **HB-EGF** mRNA in RASM. These results indicate that MG and 3-DG induce **HB-EGF** by increasing the intracellular peroxide levels. In addn., the pretreatment with 12-O-tetradecanoylphorbol-13-acetate failed to alter dicarbonyl-induced **HB-EGF** mRNA expression in RASM, suggesting that the signal transducing mechanism is not mediated by **protein kinase C**. Since **HB-EGF** is known as a potent mitogen for smooth muscle cells and is abundant in atherosclerotic plaques, the induction of **HB-EGF** by MG and 3-DG, as well as the concomitant increment of intracellular peroxides, may trigger atherogenesis during diabetes.

IT 154531-34-7, **Heparin-binding epidermal growth factor-like growth factor**

RL: BOC (Biological occurrence); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence) (heparin-binding epidermal growth factor-like growth factor induction by methylglyoxal and 3-deoxyglucosone in aortic smooth muscle cells in relation to diabetic atherogenesis)

L31 ANSWER 13 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:287535 HCAPLUS

DN 127:1171

TI Lysophosphatidylcholine increases expression of **heparin-binding epidermal growth factor-like growth factor** in human T lymphocytes

AU Nishi, Eiichiro; Kume, Noriaki; Ochi, Hiroshi; Moriwaki, Hideaki; Wakatsuki, Yoshio; Higashiyama, Shigeki; Taniguchi, Naoyuki; Kita, Toru
CS Dep. Geriatric Med., Grad. Sch. Med., Kyoto Univ., Kyoto, Japan

SO Circ. Res. (1997), 80(5), 638-644

CODEN: CIRUAL; ISSN: 0009-7330

PB American Heart Association

DT Journal

LA English

AB Atherosclerotic lesions contain substantial nos. of activated T lymphocytes in addn. to monocytes/macrophages. T cell-derived cytokines and **growth factors** may play a role in atherogenesis; however, stimuli responsible for T-cell activation in atherogenesis have not been fully elucidated. In this study, we provide evidence that lysophosphatidylcholine (lyso-PC), a polar phospholipid component increased in atherogenic lipoproteins and atherosclerotic lesions, can upregulate gene expression and secretion of **heparin-binding epidermal growth factor-**

like growth factor (HB-EGF

) in cultured T lymphocytes isolated from human peripheral blood. Effects of lyso-PC on T lymphocytes appear to be selective and specific, since lyso-PC also increases interleukin (IL)-2 receptor expression but does not affect mRNA levels for IL-2 or IL-4. Lyso-PC-induced upregulation of HB-EGF and IL-2 receptor mRNA in peripheral T cells is mostly dependent on exogenous IL-2 in conditioned medium. The effect of lyso-PC on HB-EGF induction was more potent in CD4+ cells than in CD8+ cells, although lyso-PC increases IL-2 receptor expression dramatically in both CD4+ cells and CD8+ cells. Lyso-PC similarly increased HB-EGF expression in Jurkat cells, a cell line for human CD4+ T lymphocytes. These results in vitro suggest that lyso-PC may be an important stimulus for T cells in atherogenesis in vivo to upregulate HB-EGF and that T cell-derived smooth muscle growth factors may modulate atherosclerotic progression.

IT 154531-34-7, Heparin-binding epidermal growth factor-like growth factor

RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)

(lysophosphatidylcholine increases heparin-binding EGF-like growth factor expression in human T lymphocytes)

~~131~~ ANSWER 14 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1996:505420 HCAPLUS

DN 125:186916

TI Production of glycosylated heparin-binding EGF-like growth factor in HeLa cells using vaccinia virus

AU Davis, Karen M.; Brigstock, David R.; Johnson, Philip R.; Crissman-Combs, Melissa; McCarthy, Diane W.; Dowing, Marc T.; Besner Gail E.

CS Mol., Cellular, Developmental Biol. Program, Ohio State Univ., Columbus, OH, 43205, USA

SO Protein Expression Purif. (1996), 8(1), 57-67

CODEN: PEXPEJ; ISSN: 1046-5928

DT Journal

LA English

AB Heparin-binding epidermal growth factor-like growth factor (

HB-EGF) is a 22-kDa, O-glycosylated protein.

Because recombinant expression systems permitting a detailed anal. of the functional significance of HB-EGF

glycosylation have not been described, a recombinant vaccinia virus designed to express HB-EGF was generated by

homologous recombination of an intermediate plasmid

vector carrying the HB-EGF cDNA and the genome

of vaccinia virus and was used to infect HeLa cells. Prodn. of immunoreactive HB-EGF was confirmed by

immunofluorescence and radioimmunopptn. anal. Furthermore, the expressed protein was shown to be a secreted, biol. active

protein by radioreceptor and DNA synthesis assays of HeLa cell conditioned medium. The recombinant protein was

purified from the conditioned medium using heparin-affinity fast protein liq. chromatog. followed by C4 reverse-phase

high-performance liq. chromatog. (RP-HPLC). SDS-PAGE and Western blotting of the RP-HPLC-purified product showed an immunoreactive HB-

EGF protein of approx. 22 kDa that was decreased to a

14-kDa protein by treatment with O-glycanase. Amino acid

sequencing revealed an N-terminus that was characteristic of native, glycosylated HB-EGF. Interestingly, a Thr residue

that is a putative site of O-lined glycosylation failed to be resolved. This system provides a valuable method for evaluating the role of glycosylation in **HB-EGF** function(s) as well as addressing other questions concerning **HB-EGF** structure-function relationships.

IT 154531-34-7P, Heparin-binding
epidermal growth factor-like
growth factor

RL: BMF (Bioindustrial manufacture); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(glycosylated **heparin-binding EGF-like growth factor** prodn. in HeLa cells using vaccinia virus)

L31 ANSWER 15 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1995:748166 HCAPLUS

DN 123:189239

TI Phorbol ester induces the rapid processing of cell surface **heparin-binding EGF-like growth factor**: conversion from juxtacrine to paracrine **growth factor** activity

AU Goishi, Katsutoshi; Higashiyama, Shigeki; Klagsbrun, Michael; Nakano, Norihiko; Umata, Toshiyuki; Ishikawa, Mutsuo; Mekada, Eisuke; Taniguchi, Naoyuki

CS Dep. Biochem., Osaka Univ. Med. Sch., Osaka, 565, Japan

SO Mol. Biol. Cell (1995), 6(8), 967-80

CODEN: MBCEEV; ISSN: 1059-1524

DT Journal

LA English

AB Vero cell **heparin-binding EGF-like**

growth factor (HB-EGF) is synthesized as a 20-30-kDa membrane-anchored **HB-EGF** precursor (proHB-EGF). Localization and processing of proHB-EGF, both constitutive and 12-O-tetradecanoylphorbol 13-acetate (TPA)-inducible, was examd. in Vero cells overexpressing **recombinant HB-EGF** (Vero H cells). Flow cytometry and **fluorescence** immunostaining demonstrated that Vero cell proHB-EGF is cell surface-assocd. and localized at the interface of cell to cell contacts. Cell surface biotinylation and immunopptn. detected a 20-30-kDa heterogeneous proHB-EGF species. Vero H cell surface proHB-EGF turned over constitutively with a half-life of 1.5 h. Some of the 20-30-kDa cell surface-assocd. proHB-EGF was processed and a 14-kDa species of bioactive **HB-EGF** was released slowly, but most of the proHB-EGF was internalized, displaying a diffuse **immunofluorescent** staining pattern and accumulation of proHB-EGF in endosomes. Addn. of TPA induced a rapid processing of proHB-EGF at a Prol48-Vall49 site with a half-life of 7 min. The TPA effect was abrogated by the **protein** kinase C inhibitors, staurosporine and H 7. Kinetic anal. showed that loss of cell surface proHB-EGF is maximal at 30 min after addn. of TPA and that proHB-EGF is resynthesized and the initial cell surface levels are regained within 12-24 h. Loss of cell surface proHB-EGF was concomitant with appearance of 14- and 19-kDa sol. **HB-EGF** species in conditioned medium. Vero H cell-assocd. proHB-EGF is a juxtacrine **growth factor** for EP170.7 cells in coculture. Processing of proHB-EGF resulted in loss of juxtacrine activity and a simultaneous increase in sol. **HB-EGF** paracrine mitogenic activity. It was concluded that processing regulates **HB-EGF** bioactivity by converting it from a cell-surface juxtacrine **growth factor** to a processed, released sol. paracrine **growth factor**.

IT 154531-34-7, Heparin-binding EGF-

like growth factor

RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BIOL (Biological study); PROC (Process)

(phorbol ester induces rapid processing of cell surface **heparin**

-binding EGF-like growth

factor with conversion from juxtacrine to paracrine
growth factor activity)

L31 ANSWER 16 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1995:622456 HCAPLUS

DN 123:26276

TI Membrane-anchored **heparin-binding EGF-**

like growth factor (HB-EGF

) and **diphtheria toxin** receptor-associated protein

(DRAP27)/CD9 form a complex with integrin .alpha.3.beta.1 at cell-cell contact sites

AU Nakamura, Kuniaki; Iwamoto, Ryo; Mekeda, Eisuke

CS Institute of Life Science, Kurume University, Fukuoka, 830, Japan

SO J. Cell Biol. (1995), 129(6), 1691-705

CODEN: JCLBA3; ISSN: 0021-9525

DT Journal

LA English

AB **Heparin-binding epidermal growth**

factor-like growth factor (

HB-EGF) is a member of the **EGF** family of

growth factors, which interact with **EGF**

receptor to exert mitogenic activity. The membrane-anchored form of

HB-EGF, **proHB-EGF**, is biol. active, providing

mitogenic stimulation to neighboring cells in a juxtacrine mode. **ProHB-**

EGF forms a complex with **diphtheria toxin**

receptor-assocd. **protein** (DRAP27)/CD9, a tetra membrane-spanning

protein that upregulates the juxtacrine mitogenic activity of

proHB-EGF. We explored whether other **proteins** assoc.

with DRAP27/CD9 and **proHB-EGF**. Immunopptn. with anti-DRAP27/CD9

resulted in preferential copptn. of integrin .alpha.3.beta.1 from Vero

cell, A431 cell and MG63 cell lysates. Anti-integrin .alpha.3 or

anti-integrin .beta.1 copptd. DRAP27/CD9 from the same cell lysates.

Chem. crosslinking confirmed the phys. assocn. of DRAP27/CD9 and integrin

.alpha.3.beta.1. Using Vero-H cells, which overexpress **HB-**

EGF, we also demonstrated the assocn. of **proHB-EGF** with

DRAP27/CD9 and integrin .alpha.3.beta.1. Moreover, colorization of **proHB-**

EGF, DRAP27/CD9, and integrin .alpha.3.beta.1 at cell-cell contact

sites was obsd. by double-immunofluorescence staining. At

cell-cell contact sites, DRAP27/CD9 was highly coincident with

.alpha.-catenin and vinculin, suggesting that DRAP27/CD9, **proHB-**

EGF, and integrin .alpha.3.beta.1 are colocalized with adherence

junction-locating **proteins**. These results indicate that direct

interaction of **growth factors** and cell adhesion mols.

may control cell proliferation during the cell-cell adhesion process.

IT 154531-34-7

RL: BPR (Biological process); BIOL (Biological study); PROC (Process)

(membrane-anchored **heparin-binding EGF-**

like growth factor (HB-

EGF) and **diphtheria toxin** receptor-assocd.

protein (DRAP27)/CD9 form a complex with integrin .alpha.3.beta.1 at cell-cell contact sites)

L31 ANSWER 17 OF 18 HCAPLUS COPYRIGHT 2002 ACS

AN 1994:672962 HCAPLUS

DN 121:272962

TI Biosynthesis and processing by phorbol ester of the cell

surface-associated precursor form of **heparin-binding**

EGF-like growth factor

- AU Raab, Gerhard; Higashiyama, Shigeki; Hetelekidis, Stella; Abraham, Judith
CS A.; Damm, Deborah; Ono, Minoru; Klagsbrun, Michael
SO Harvard Med. Sch., Children's Hospital, Boston, MA, 02115, USA
Biochem. Biophys. Res. Commun. (1994), 204(2), 592-7
CODEN: BBRCA9; ISSN: 0006-291X
- DT Journal
LA English
AB Human MDA MB 231 cells were found to synthesize mostly the cell surface-assocd. precursor form of **heparin-binding EGF-like growth factor** (HB-BGF), a 27-kDa **protein**. Evidence for this form of **HB-EGF** included increased **fluorescence** intensity when cells analyzed by flow cytometry using anti-**HB-EGF** antibodies, lack of **HB-EGF** in conditioned medium, and sensitivity to **diphtheria toxin**, for which **HB-EGF** is the receptor. Phorbol ester treatment of cells resulted, within 30 min, in loss of cell surface 27 kDa **HB-EGF**, lack of interaction with anti-**HB-EGF** antibodies, accumulation of active 21 kDa **HB-EGF** in conditioned medium, and the acquisition of **diphtheria toxin** resistance. It was concluded that cell surface-assocd. **HB-EGF** is the precursor of a bioactive **growth factor**, is biol. active as the receptor for **diphtheria toxin**, and is susceptible to rapid processing.
- IT 154531-34-7, **Heparin-binding EGF-like growth factor**
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BIOL (Biological study); PROC (Process)
(phorbol ester processing of cell surface-assocd. **heparin-binding EGF-like growth factor** as bioactive **growth factor** precursor and **diphtheria toxin** receptor)
- L31 ANSWER 18 OF 18 HCAPLUS COPYRIGHT 2002 ACS
AN 1994:596814 HCAPLUS
DN 121:196814
TI Analysis of the expression of growth factor, interleukin-1, and lactoferrin genes and the distribution of inflammatory leukocytes in the preimplantation mouse oviduct
- AU Dalton, Tim; Kover, Karen; Dey, Sudhansu K.; Andrews, Glen K.
CS Medical Cent., Univ. Kansas, Kansas City, KS, 66160-7421, USA
SO Biol. Reprod. (1994), 51(4), 597-606
CODEN: BIREBV; ISSN: 0006-3363
- DT Journal
LA English
AB The oviduct provides the environment in which fertilization of the egg and subsequent development of the preimplantation mouse embryo occurs, but little is known about the oviduct's capacity to produce **growth factors** or cytokines that may influence these preimplantation events. Northern blot anal. and/or immunohistochem. were employed to examine the expression or cellular distribution, resp., of the **growth factors heparin-binding epidermal-like growth factor** (HB-EGF), transforming **growth factor** (TGF).alpha., **EGF**, IGF-I, TGF.beta.1, TGF.beta.2, and TGF.beta.3; of estrogen-regulated lactoferrin (LF); and of the cytokines **interleukin** (IL)-1.alpha. and **IL**-1.beta. in the mouse oviduct during the preimplantation period (Days 1-4 [Day 1 = vaginal plug]) and 7 days after ovariectomy. Except for **EGF**, each of the **growth factors** and the LF genes were expressed in the ampulla and isthmus regions of the oviduct throughout the preimplantation period. Prominent immunostaining in secretory epithelial cells was noted for **HB-EGF**,

TGF.alpha., IGF-I, TGF.beta.1, and TGF.beta.2, and LF. Less intense immunostaining in the serosa and/or smooth muscle was also noted for TGF.alpha., IGF-I, and TGF.beta.1. In contrast, intense immunostaining in smooth muscle was noted for TGF.beta.2, and TGF.beta.3 was detected exclusively in smooth muscle cells. The abundance of these mRNAs was relatively const. during the preimplantation period, and ovariectomy did not reduce the levels of these mRNAs. In contrast to these **growth factors**, the cytokine mRNAs examd. (IL-1.alpha. and IL-1.beta.) were at or below the limits of detection under these exptl. conditions, and inflammatory leukocytes (LF-immunopos. neutrophils, IL-1.beta.-immunopos. monocytes/macrophages, or peroxidase-pos. eosinophils) were not detected in the oviduct, but were abundant in the adjacent uterine stroma on Day 1. These studies show that several **growth factors** are synthesized by the mouse oviduct and suggest that ovarian steroids do not play a major role in modulating expression of these genes in the oviduct during the preimplantation period. Furthermore, unlike the uterus on Day 1, the oviduct does not exhibit an inflammatory response to mating.

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MOST RECENT DERWENT UPDATE 200230 <200230/DW>
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http://www.derwent.com/userguides/dwpi_guide.html <<<

=> d all abeq tech tot

~~L70 ANSWER 1 OF 4 WPIX (C) 2002 THOMSON DERWENT~~

AN 2002-082745 [11] WPIX

DNN N2002-061698 DNC C2002-024972

TI New nucleotide polymorphisms in the human diphtheria toxin receptor,
heparin-binding epidermal growth factor-like growth factor (DTR)
gene, useful for screening or expressing proteins for treating diseases
related to DTR activity.

DC B04 D16 T01

IN CHOI, J Y; KLIEM, S E; KOSHY, B; PARKS, K E; STEPHENS, J C

PA (GENA-N) GENAISSANCE PHARM INC

CYC 94

PI WO 2001079233 A2 20011025 (200211)* EN 66p C07H000-00

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ
NL OA PT SD SE SL SZ TR TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC

LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE
 SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
 AU 2001057057 A 20011030 (200219) C07H000-00
 ADT WO 2001079233 A2 WO 2001-US12302 20010416; AU 2001057057 A AU 2001-57057
 20010416

FDT AU 2001057057 A Based on WO 200179233

PRAI US 2000-197375P 20000414

IC ICM C07H000-00

AB WO 200179233 A UPAB: 20020215

NOVELTY - An isolated polynucleotide, comprising polymorphisms in the human diphtheria toxin receptor, **heparin-binding epidermal growth factor-like growth factor** (DTR) gene, is new.

DETAILED DESCRIPTION - An isolated polynucleotide, comprising polymorphisms in the human diphtheria toxin receptor, **heparin-binding epidermal growth factor-like growth factor** (DTR) gene, is new. The isolated polynucleotide has:

(a) a nucleotide sequence comprising:

(i) a first nucleotide sequence that is a polymorphic variant of a reference sequence for the DTR gene or its fragment, where the reference sequence comprises a 16488 base pair sequence, fully defined in the specification and the polymorphic variant comprises a DTR isogene defined by a haplotype consisting of haplotypes 1-10 identified in the DTR gene and fully described in the specification; and

(ii) a second nucleotide sequence that is complementary to (i); or

(b) a nucleotide sequence that is a polymorphic variant of a reference sequence for the DTR cDNA or its fragment, where the reference sequence comprises a 627 base pair sequence, fully defined in the specification, and the polymorphic variant comprises the coding sequence of a DTR isogene defined by one of 10 human haplotypes observed in the DTR gene and fully defined in the specification.

INDEPENDENT CLAIMS are also included for the following:

(1) haplotyping the DTR gene of an individual comprising:

(a) determining if the individual has one of the 14 haplotypes observed in the DTR gene fully defined in the specification, or one of the haplotype pairs observed in the DTR gene and described in the specification; or

(b) determining, for one copy of the DTR gene present in the individual, the identity of the nucleotide at one or more polymorphic sites selected from PS1, PS2, PS3, PS4, PS5, PS6, PS7 or PS8;

(2) genotyping the DTR gene of an individual by determining for the two copies of the DTR gene present in the individual, the identity of the nucleotide pair at one or more polymorphic sites selected from PS1, PS2, PS3, PS4, PS5, PS6, PS7 or PS8;

(3) predicting a haplotype pair for the DTR gene of an individual comprising:

(a) identifying a DTR genotype for the individual, where the genotype comprises the nucleotide pair at two or more polymorphic sites comprising PS1-PS8;

(b) enumerating all possible haplotype pairs, which are consistent with the genotype;

(c) comparing the possible haplotype pairs to the data in the genotype and haplotype pairs observed in the DTR gene described in the specification; and

(d) assigning a haplotype pair to the individual that is consistent with the data;

(4) identifying an association between a trait and at least one haplotype or haplotype pair of the DTR gene, which comprises comparing the frequency of the haplotype or haplotype pair in a population exhibiting the trait with the frequency of the haplotype or haplotype pair in a reference population, where the haplotype comprises haplotypes 1-10 observed in the DTR gene and the haplotype pair is selected from the

haplotype pairs cited in the specification, where a higher frequency of the haplotype or haplotype pair in the trait population than in the reference population indicates the trait is associated with the haplotype or haplotype pair;

(5) a composition comprising at least one genotyping oligonucleotide for detecting a polymorphism in the DTR gene at a polymorphic site consisting of PS1-PS19;

(6) a kit for genotyping the DTR gene of an individual comprising a set of oligonucleotides designed to genotype each of PS1-PS19;

(7) recombinant non-human organisms transformed or transfected with the isolated polynucleotide, where the organism expresses a DTR protein encoded by the first nucleotide sequence or expresses an DTR protein encoded by the polymorphic variant sequence;

(8) a computer system for storing and analyzing polymorphism data for the DTR gene, comprising:

(a) a central processing unit (CPU);

(b) a communication interface;

(c) a display device;

(d) an input device; and

(e) a database containing the polymorphism data; and

(9) a genome anthology for the DTR gene, which comprises DTR isogenes defined by one of the haplotypes 1-10 defined in the specification.

USE - The polynucleotide comprising polymorphisms in the DTR gene is useful in studying the expression and function of DTR, and in expressing DTR protein for use in screening candidate drugs to treat diseases related to DTR activity. The methods and haplotypes are useful in improving the efficiency and output of several steps in the drug discovery and development process, including target validation, identifying lead compounds, and early phase clinical trials. These are also useful for designing clinical trials of candidate drugs for treating a specific condition or disease, as well as for screening compounds targeting DTR to treat a specific condition or disease predicted to be associated with DTR activity. The kit and method are useful for determining if an individual has one of the haplotypes or haplotype pairs. The transgenic animals are useful for studying expression of the DTR isogenes in vivo, for in vivo screening and testing of drugs targeted against DTR protein, and for testing the efficacy of therapeutic agents and compounds for tumor **growth**, smooth muscle hyperplasia or atherosclerosis in a biological system.

Dwg.0/3

FS CPI EPI

FA AB; DCN

MC CPI: B04-A08C2E; B04-E01; B04-E02D; B04-E05; B04-E06; B04-F0100E; B04-F0200E; B04-F0700E; B04-P0100E; B11-C08E2; B11-C08E4; B12-K04A3; B12-K04E; B12-K04F; D05-H09; D05-H12B1; D05-H12D1; D05-H12D2; **D05-H14**; D05-H16; D05-H17A4

EPI: T01-J05B4P

TECH UPTX: 20020215

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: The determining step comprises identifying the phased sequence of nucleotides present at each of PS1-8 on at least one copy of the individual's DTR gene. It may also involve identifying the phased sequence of nucleotides present at each of PS1-8 on both copies of the individual's DTR gene. The determining step comprises:

(a) isolating from the individual a nucleic acid mixture comprising both copies of the DTR gene or their fragment, which are present in the individual;

(b) amplifying from the nucleic acid mixture a target region containing the selected polymorphic site;

(c) hybridizing a primer extension oligonucleotide to one allele of the amplified target region;

(d) performing a nucleic acid template-dependent, primer extension reaction on the hybridized genotyping oligonucleotide in the presence of

at least two different terminators of the reaction, where the terminators are complementary to the alternative nucleotides present at the selected polymorphic site; and

(e) detecting the presence and identity of the terminator in the extended genotyping oligonucleotide.

The method also comprises determining for the two copies of the DTR gene present in the individual the identity of the nucleotide pair at each of PS1-8. In particular, haplotyping the DTR gene comprises determining the identity of the nucleotide at PS2. The method may also comprise:

(a) isolating from the individual a nucleic acid sample containing only one of two copies of the DTR gene or their fragment, that are present in the individual;

(b) amplifying from the nucleic acid mixture a target region containing the selected polymorphic site;

(c) hybridizing a primer extension oligonucleotide to one allele of the amplified target region;

(d) performing a nucleic acid template-dependent, primer extension reaction on the hybridized genotyping oligonucleotide in the presence of at least two different terminators of the reaction, where the terminators are complementary to the alternative nucleotides present at the selected polymorphic site; and

(e) detecting the presence and identity of the terminator in the extended genotyping oligonucleotide.

The identified genotype of the individual comprises the nucleotide pair at each of PS1-PS8. In the method of (4), the trait is a clinical response to a drug targeting DTR.

Preferred Composition: The genotyping oligonucleotide is an allele-specific oligonucleotide that specifically hybridizes to an allele of the DTR gene at a region containing the polymorphic site. The allele-specific oligonucleotide comprises a nucleotide sequence consisting of e.g. cccggcgcsaa tctcc; gctggggrca tgggg; aggagcaygg gaaaa; cctcctgyat gtaag; gctgtttmtg caaat; tagctccrgg gtgta; atgggctagc tccrg; agaatctaca cccyg; gcaggcaggg ctttr; or taagttttgt gaaya. The genotyping oligonucleotide is a primer-extension oligonucleotide, where the primer extension oligonucleotide comprises a nucleotide sequence comprises: gtgccccggcg; tcaggagatt; tgtgctgggg; ttcccccatg; aggaggagca; ttcttttccc; ctccctcctg; gcatttacat; caggctgttt; gtgatttgca; ggctagctcc; atctacaccc; ggcagggcct; or gttttgtgaa.

Preferred Kit: The kit further comprises oligonucleotides designed to genotype PS2.

Preferred Polynucleotide: The isolated polynucleotide is a DNA molecule and comprises both the first and second nucleotide sequences. It further comprises expression regulatory elements operably linked to the first nucleotide sequence. The first nucleotide sequence is a polymorphic variant of a fragment of the DTR gene. The fragment comprises one or more polymorphisms comprising cytosine at PS1, adenine at PS3, thymine at PS4, thymine at PS5, adenine at PS6, adenine at PS7 and guanine at PS8. The polymorphic variant comprises an additional polymorphism of thymine at PS2.

Preferred Organism: The recombinant organism is a nonhuman transgenic animal.

L70 ~~ANSWER 2 OF 4 - WPIX (C) 2002 THOMSON DERWENT~~

AN ~~2001-335931 [35] WPIX~~

DNN N2001-242476 DNC C2001-103839

TI Screening for agents capable of inhibiting a promoter, especially interleukin-4 inducible epsilon promoter involved in immunoglobulin E production, by using diphtheria toxin constructs.

DC B04 D16 S03

IN KINSELLA, T M

PA (RIGE-N) RIGEL PHARM INC

CYC 93

PI WO 2001034806 A2 20010517 (200135)* EN 80p C12N015-12 <--

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ
 NL OA PT SD SE SL SZ TR TZ UG ZW
 W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM
 DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC
 LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE
 SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

AU 2001029044 A 20010606 (200152) C12N015-12 <--
 ADT WO 2001034806 A2 WO 2000-US31232 20001113; AU 2001029044 A AU 2001-29044
 20001113

FDT AU 2001029044 A Based on WO 200134806

PRAI US 1999-165189P 19991112

IC ICM C12N015-12

ICS C07K014-435; C07K014-475; C12N015-62;
 C12N015-86; C12Q001-68; G01N033-50;
 G01N033-533

AB WO 200134806 A UPAB: 20010625

NOVELTY - Screening for bioactive agents (BA) which inhibit a promoter, comprising combining candidate BA and a cell containing a fusion nucleic acid (NA) having a promoter and NA encoding **heparin-binding epidermal growth factor-**

like growth factor (HBEGF), optionally

inducing the promoter, introducing diphtheria toxin to the cell and

detecting the cell's presence, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a composition (C) comprising a retroviral vector containing a nucleic acid encoding HBEGF fused to a nucleic acid encoding a **green fluorescent protein** (GFP); and

(2) a cell line selected from CA-46 and BJAB, for screening, comprising a fusion nucleic acid, containing an interleukin (IL)-1 inducible epsilon promoter and a nucleic acid encoding HBEGF.

USE - The method is useful for screening bioactive agents capable of inhibiting a promoter of interest, in particular, IL-4 inducible epsilon promoter (claimed), which is involved in immunoglobulin (Ig)E production. An early step in the Ig switch is the production of sterile epsilon-transcripts in response to IL-4. Inhibitors of IgE production prevent the production of IgE and reduce or eliminate an allergic response. In addition to screening for agonists and antagonists of promoters, the diphtheria toxin/HBEGF system is useful in splice junction analysis, to screen for inhibitors of viral infection, RNA transport, agonists and antagonists of translational level regulators and regulators of post-translational levels.

ADVANTAGE - The method is amenable to high-throughput screening strategies so that large number of potential drugs may be screened rapidly and efficiently.

Dwg.0/18

FS CPI EPI

FA AB; DCN

MC CPI: B04-E05; B04-F0100E; B04-F1100E; B11-C08E1; B12-K04E;

D05-H09; D05-H12E; D05-H14B

EPI: S03-E14H; S03-E14H4

TECH UPTX: 20010625

TECHNOLOGY FOCUS - BIOTECHNOLOGY - Preferred Method: BA and the cell comprising the fusion NA are combined by introducing an retroviral vector comprising NA encoding BA to the cell. A library of retroviral vectors comprising a library of candidate BAs is added to a population of cells. The retroviral vector further comprises NA encoding a fluorescent label. Preferred Composition: The retroviral vector in (C), comprises an internal ribosome entry site (IRES), 2a site and IL-4 epsilon promoter fused to the nucleic acid encoding HBEGF. GFP is derived from Renilla mulleri, Pitilosarcus gurneyi or Aequorea.

AN 1999-059041 [05] WPIX
 CR 1991-058151 [08]; 1997-033562 [03]; 1997-469495 [43]; 1999-131299 [11];
 2000-135935 [53]; 2000-664558 [64]
 DNC C1999-017264
 TI Screening assay using reporter gene construct - for modulators of genes
 associated with cardiovascular diseases.
 DC B04 D16
 IN CASE, C C; FOULKES, J G; LIECHTFRIED, F E; PIELER, C; STEPHENSON, J R
 PA (ONCO-N) ONCOGENE SCI INC
 CYC 1
 PI US 5846720 A 19981208 (199905)* 95p C12Q001-68 <--
 ADT US 5846720 A CIP of US 1989-382712 19890718, CIP of US 1990-555196
 19900718, CIP of WO 1990-US4021 19900718, Cont of US 1992-832905 19920207,
 US 1996-700757 19960815
 FDT US 5846720 A Cont of US 5580722
 PRAI US 1992-832905 19920207; US 1989-382712 19890718; US 1990-555196
 19900718; WO 1990-US4021 19900718; US 1996-700757 19960815
 IC ICM C12Q001-68
 ICS C07H021-04; C12N015-85; C12P019-34
 AB US 5846720 A UPAB: 20001214

Method for determining if a test compound is capable of specifically transcriptionally modulating the expression of a gene encoding a protein of interest associated with the treatment of cardiovascular disease comprises: (a) contacting a sample containing a predefined number of identical eukaryotic cells with a predetermined concentration of the test compound, where the cells contain a DNA construct consisting of, in 5' to 3' order: a modulatable transcription regulatory sequence of the gene encoding the protein of interest; a promoter of the gene encoding the protein of interest; and a reporter gene under the control of the promoter; (b) measuring the signal produced by the reporter gene or the amount of mRNA transcribed from the reporter gene; and (c) comparing the measurement with that obtained in the absence of the test compound.

USE - The cardiovascular disease may be atherosclerosis or restenosis. The protein of interest may be involved in lipid transport or cellular uptake e.g. apolipoprotein (a, A1, AII, AIV, B, CI, CII, CIII or E), low density lipoprotein receptor (LDL-R), cholesterol ester transfer protein, hepatic TG lipase, lipoprotein lipase, high density lipoprotein receptor p110, LDL receptor like protein, ARPL, LDL-R protein kinase, apolipoprotein E receptor or oncostatin M. The protein of interest may be involved in the uptake of modified lipoproteins e.g. LDL-R, scavenger receptor, advanced glycosylated end product receptor or macrophage FC receptor. The protein of interest may be involved in lipid metabolism e.g. AMP-activated protein kinase, AMP activated protein kinase, acetyl CoA cholesterol ester transferase, lecithin cholesterol ester transferase, cholesterol 7 alpha -hydroxylase, hormone sensitive lipase/cholesterol ester hydroxylase or HMG CoA reductase. The protein of interest may be involved in lipid oxidation e.g. 15-lipoxygenase, IL-4, IL-4 receptor, superoxide dismutase or 12-lipoxygenase. The protein of interest may be involved in smooth muscle cell growth such as platelet derived growth factor (PDGFa), PDGF-B, PDGF-alpha receptor, PDGF- beta receptor, heparin-binding EGF-like growth factor, basic fibroblast growth factor (bFGF), aFGF, FGF receptor, IL-1, IL-1 receptor p80, IL-1 receptor protein kinase, interferon gamma, TGF- beta 1, TGF- beta 2, TGF- beta 3, TGF receptor, tumour necrosis factor alpha (TNF- alpha), TNF- alpha receptor, alpha -thrombin, alpha -thrombin receptor, 9-hydroxyoctadeca-10,12-dienoic acid (9-HODE) receptor, insulin like growth factor, platelet factor-4, TGF- alpha , thromboxane A2 receptor, 12-hydroxy-5,8,10,14-eicosatetraenoic acid (12-HETE) receptor, 13-hydroxyoctadeca-9,11-dienoic acid (13-HODE) receptor, IL 6, IL 6 receptor or EGF receptor. The protein of interest may be an endothelial cell growth factor or receptor (

EGF) such as vascular EGF, VEGF receptor, bFGF, aFGF, FGF receptor or platelet derived endothelial cell **growth factor**. The protein of interest may be associated with macrophage **growth** and chemotaxis e.g. CSF-1, CSF-1 receptor, monocyte chemoattractant protein 1 (MCP-1) or MCP-1 receptor. The protein of interest associated with atherosclerosis may be associated with endothelial cell adhesion such as VCAM-1, VLA-4 alpha 4 subunit, VLA-4 beta 1 subunit, ELAM-1, ICAM-1, LFA-1 alpha L subunit, LFA-1 beta 2 subunit, GMP-140 (PADGEM), neuropeptide Y, VLA-4 alpha 1 subunit, vitronectin receptor or 13-HODE receptor. The protein of interest associated with the treatment of cardiovascular disease or atherosclerosis may be PEPCK. The cardiovascular disease may be associated with thrombosis. In these cases the protein of interest may be one of the following: fibrinogen, fibrinogen receptor subunit IIb, fibrinogen receptor subunit IIIa, fibrinogen receptor subunit beta 3, fibrinogen receptor subunit alpha v, von Willebrand **factor** (vWF), vWF receptor subunit Ib beta, vWF receptor subunit Ib alpha, vWF receptor subunit GPIIb/IIIa, plasminogen activator-1, platelet activating **factor** receptor, plasminogen, tissue plasminogen activator t PA, u-PA, **factor V, factor VII, factor VIII, factor IX, factor X, factor XI, factor XII, protein C, protein S, thrombomodulin, tissue factor, thrombospondin, CD36, kininogen, an eicosanoid receptor or an eicosanoid biosynthetic enzyme**. The cardiovascular disease may be hypertension. The protein of interest associated with hypertension includes: angiotensin, preprorenin, renin, angiotensin converting enzyme (ACE), atrial natriuretic peptide (ANP), brain natriuretic peptide, C natriuretic peptide, natriuretic peptide receptor A, natriuretic peptide receptor-B, natriuretic peptide receptor C, EDRF, nitric oxide synthase 1 (Ca²⁺/calmodulin dependent), nitric oxide synthase II (inducible), nitric oxide dependent guanylate cyclase alpha subunit, nitric oxide dependent guanylate cyclase beta subunit, alpha-adrenoceptors, endothelins, endothelin receptors, vasopressin, vasopressin receptor, serotonin (5-HT) receptors, adenosine receptors, P2 purinoceptors, calcitonin gene related peptide (CGRP), CGRP receptor, substance P, substance K, neurokinin B, tachykinin receptor, angiotensin II receptor AT1, kininogen, tissue kallikrein, plasma kallikrein, an acetylcholine receptor, a voltage dependent calcium channel, an eicosanoid receptor, an eicosanoid biosynthetic enzyme, a beta-adrenoceptor, Na⁺, K⁺-ATPase, vasoactive intestinal peptide, a histamine receptor, an aldosterone receptor or heart angiotensinogen kinase. Additional cardiovascular diseases or diseases associated with the symptoms of cardiovascular diseases include congestive heart failure, angina, ischemic heart disease, diabetes mellitus, non-insulin-dependent diabetes, thrombophlebitis, stroke, hypercholesterolemia, familial hypercholesterolemia, combined familial hypercholesterolemia, hyperglycaemia or diseases associated with calcium regulation or metabolism.

Dwg.0/42

FS CPI

FA AB

MC CPI: B04-E03; B04-F02; B04-F0200E; B11-C08E; B12-K04A2; B14-F01; B14-F07; D05-H09; D05-H12

~~L70 ANSWER 4 OF 4 WPIX (C) 2002 THOMSON DERWENT~~

AN 1996-209350 [21] WPIX

DNC C1996-066797

TI DNA contg. heparin binding epidermal **growth factor-like enhancer** - used to provide endothelial cell specific expression of heterologous protein, partic. for inhibition of arteriosclerosis..

DC B04 D16

IN FEN, Z; LEE, M; ZHOU, F

PA (HARD) HARVARD COLLEGE

CYC 19
 PI WO 9610628 A1 19960411 (199621)* EN 38p C12N001-20
 RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
 W: CA JP
 US 5656454 A 19970812 (199738) 13p C12N015-00
 ADT WO 9610628 A1 WO 1995-US12880 19951004; US 5656454 A US 1994-317333
 19941004
 PRAI US 1994-317333 19941004
 REP 4.Jnl.Ref; US 4764504
 IC ICM C12N001-20; C12N015-00
 ICS C12N005-10; **C12N015-12**
 AB WO 9610628 A UPAB: 19960529
 Pure DNA (I) contg. a **heparin-binding**
epidermal growth factor-like
growth factor (HB-EGF) enhancer is
 new. Also new are: (1) vectors contg. (I); and (2) endothelial cells
 contg. a vector as in (1).
 USE - (I), when associated with a sequence encoding a heterologous
 polypeptide, is used to inhibit arteriosclerosis (by inhibiting
 proliferation of smooth muscle cells), or (not claimed) other vascular
 diseases such as hypertension and excessive blood clotting. Also new is
 treatment of arteriosclerosis by using a cpd that **binds** to (I).
 (I) can also be used to direct endothelial-cell specific polypeptide
 expression and to identify cpds that inhibit expression of **HB-**
EGF (from their ability to **bind** to (I)).
 Dwg.0/7
 FS CPI
 FA AB
 MC CPI: B04-E03; B04-E08; B04-F0200E; B12-K04; B14-F07; D05-H12D5; D05-H12D6;
 D05-H12E; D05-H14B2; D05-H17
 ABEQ US 5656454 A UPAB: 19970922
 A substantially pure DNA comprises a **heparin-binding**
epidermal growth factor-like
growth factor (HB-EGF) enhancer,
 operably linked to a heterologous promoter and a sequence encoding a
 heterologous polypeptide, where the enhancer comprises a 316 base pair
 sequence given in the specification and the enhancer directs endothelial
 cell-specific expression of the heterologous polypeptide.
 Dwg.0/7

=> d his

(FILE 'HOME' ENTERED AT 14:13:19 ON 14 MAY 2002)
 SET COST OFF

FILE 'HCAPLUS' ENTERED AT 14:13:33 ON 14 MAY 2002
 L1 67 S ?HBEGF?

FILE 'REGISTRY' ENTERED AT 14:13:56 ON 14 MAY 2002
 L2 1 S 154531-34-7

FILE 'HCAPLUS' ENTERED AT 14:14:38 ON 14 MAY 2002
 L3 375 S L2
 L4 517 S HEPARIN(L) BIND?(L) (EGF OR EPIDERMAL GROWTH FACTOR) (L) LIKE(L) G
 L5 389 S HB EGF
 L6 601 S L1, L3-L5
 L7 9063 S GREEN(L) ?FLUORESC?(L) PROTEIN OR GFP
 L8 1 S L6 AND L7
 L9 9 S ?FLUORESC?(L) PROTEIN AND L6
 L10 1 S GREEN(L) ?FLUORESC? AND L6
 L11 8 S L9, L10 NOT L8

L12 1364 S IRES OR INTERNAL?(L)RIBOSOM?(L)ENTRY?(L)SITE
L13 17084 S (IL OR INTERLEUKIN) () 4
L14 31932 S (IL OR INTERLEUKIN) (L) 4
L15 1 S L6 AND L12
L16 8 S L6 AND L13
L17 11 S L6 AND L14
L18 1 S L15-L17 AND EPSILON
L19 1 S L8,L10,L15,L18
L20 18 S L8-L11,L15-L19 NOT L19
L21 11 S L20 AND (RECOMBIN? OR ?DIPHThER? OR ?TOXIN? OR ?TOXOID? OR VE
L22 7 S L20 NOT L21
E KINSELLA T/AU
L23 8 S E14,E15
L24 1 S L23 AND L6
L25 1 S L19,L24
E RIGEL/PA,CS
L26 1 S E3-E13 AND L6
L27 1 S L25,L26
L28 1 S L27 AND L1,L2-L27
L29 0 S LL20-L22 NOT L28
L30 18 S L20-L22,L11 NOT L28
L31 18 S L30 AND L1,L2-L30

FILE 'REGISTRY' ENTERED AT 14:44:55 ON 14 MAY 2002

FILE 'HCAPLUS' ENTERED AT 14:45:09 ON 14 MAY 2002

FILE 'BIOSIS' ENTERED AT 14:47:02 ON 14 MAY 2002

L32 711 S L6
L33 10326 S L7
L34 0 S L32 AND L33
L35 6 S L12,L13,L14 AND L32
E KINSELLA T/AU
L36 58 S E3,E8,E15
L37 0 S L32 AND L36
E RIGEL/CS
L38 0 S E3-E21 AND L32
L39 9 S L32 AND ?FLUORESC?(L) PROTEIN
L40 0 S L32 AND ?FLUORESC?(L) GREEN
L41 0 S L32 AND GREEN(L) PROTEIN

FILE 'MEDLINE' ENTERED AT 14:49:41 ON 14 MAY 2002

L42 512 S L6
L43 0 S L7 AND L42
L44 8248 S L7
E LUMINESCENT PROTEINS/CT
E E3+ALL
L45 6172 S E4+NT
L46 5526 S E4/BI,CN,CT
L47 0 S L42 AND L45-L46

FILE 'EMBASE' ENTERED AT 14:51:57 ON 14 MAY 2002

L48 485 S L6
L49 6360 S L7
L50 0 S L48 AND L49

FILE 'WPIX' ENTERED AT 14:52:58 ON 14 MAY 2002

L51 46 S L4 OR L5
L52 746 S L7
L53 2 S L51 AND L52
L54 1 S L51 AND G01N033-533/IC, ICM, ICS, ICA, ICI
L55 1 S L51 AND C12N015-86/IC, ICM, ICS, ICA, ICI
L56 3 S L51 AND C12N015-62/IC, ICM, ICS, ICA, ICI

L57 6 S L51 AND C12N015-12/IC, ICM, ICS, ICA, ICI
L58 5 S L51 AND C12Q001-68/IC, ICM, ICS, ICA, ICI
L59 4 S L51 AND C07K014-475/IC, ICM, ICS, ICA, ICI
L60 1 S L51 AND C07K014-435/IC, ICM, ICS, ICA, ICI
L61 4 S L51 AND (B04-F11? OR C04-F11? OR B04-B02B4 OR C04-B02B4)/MC
L62 10 S L51 AND D05-H12E/MC
L63 1 S L51 AND D05-H14B/MC
L64 4 S L51 AND D05-H14/MC
L65 17 S L54-L64
L66 2 S L53 AND L65
L67 1 S L66 NOT APOPTOSIS
L68 15 S L65 NOT L66
SEL DN AN 4 14 15
L69 3 S E1-E7
L70 4 S L67, L69 AND L51-L69

FILE 'WPIX' ENTERED AT 15:08:04 ON 14 MAY 2002